

A CRITICAL REVIEW ON ROLE OF GUDUCHI SATTVA IN THE MANAGEMENT OF
THROMBOCYTOPENIA INDUCED EPISTAXIS

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INTRODUCTION

Epistaxis is one of the commonest symptoms of Immune Thrombocytopenia. Nearly 60% population, suffer from epistaxis at least once in lifetime.^[1] It may not be the first sign of ITP, but plays an important role in early diagnosis of the disorder. The incidence of epistaxis in ITP is 17% in children and 1.5% in adults.^[2] In children the incidence of ITP is higher in boys in comparison with girls.^[3] In adults, women are more affected than men.^[4]

Thrombocytopenia is defined as a condition in which platelet count is less than $150 \times 10^3/\text{ul}$. It is observed that patients with platelet count more than $50 \times 10^3/\text{ul}$ rarely show symptoms. A platelet count between 30 to $50 \times 10^3/\text{ul}$ manifests as purpura. A count between 10 to $30 \times 10^3/\text{ul}$ may cause bleeding with minimal trauma. A platelet count less than $5 \times 10^3/\text{ul}$ may cause spontaneous bleeding and contribute to hematologic emergencies.^[5] Thrombocytopenia can result from the decreased platelet production, increased platelet consumption or sequestration.^[6,7] Human survival depends on the capacity of blood to remain fluid within the circulatory system and to clot promptly following injury to blood vessels. Blood loss is minimized by vascular integrity and the soft tissue support to small vessels, by circulating platelets and by several plasma proteins which are responsible for the coagulation process. Platelets generally have a circulating lifespan of 10 +/- 1.5 days as anucleate fragments 2 to 3 μm in diameter. At any given time two thirds of the total functioning platelets are in the circulating blood with one third stored in Spleen.^[8] Viable platelets are necessary for normal retraction of the fibrin clot.^[9] Thrombocytopenia is one of the most common haematological disorders observed in critically ill patients. Prevalence has been found to be about 50% and Incidence varies between 13% to 44%.^[10,11] In Immune Thrombocytopenia, an abnormal auto antibody, generally immunoglobulin G(IgG) with specificity for one or more platelet membrane glycoproteins, bind to circulating platelet membranes.^[12,13]

In Ayurveda, ITP can be correlated to Raktapitta. In the manifestations of Raktapitta, Pitta dosha gets vitiated due to different causative factors. This vitiated pitta increases the volume of Rakta dhatu because of the ushna guna of

Pitta. The Rakta dhatu starts flowing out from different orifices of body.^[14] The prodromal symptoms of Raktapitta include aversion of food, hot eructation just after food, belches with smell and after taste of sour gruel, frequent vomiting, unpleasant form of vomitus, hoarseness of voice, malaise, radiating burning sensation, emittance of smoke from the mouth, smell of metal, blood or fish, excessive salivation, appearance of red, green or yellow spots on body parts, boils, bodyache, frequent visions of red, blue, yellow, blackish and glittering objects in dreams.^[14] Raktapitta is classified into three types, a) Urdhvaga - the causative factors are snigdha and ushna guna, which vitiate the kapha and pitta. They in turn vitiate Rakta; this contaminated Rakta starts oozing out from upper orifices, that is from Mukha (mouth), Karna (Ears), Akshi (Eyes) and Nasa (Nostrils). b) Adhoga - the attributing properties are ruksha and ushna guna which causes vitiation of vata and pitta and oozing of contaminated blood occurs from lower orifices, i.e. from guda (anus), yoni (vaginal canal), mutra marga (urethral orifice). c) Tiryaka - All the three doshas are vitiated in this form of Raktapitta. The deranged tridoshas are circulating in the blood stream and the manifestation occurs sub-cutaneously.^[15] The Epistaxis in ITP can be correlated with Urdhwaga Raktapitta; since the bleeding occurs from upper orifices like nose.

Tinospora Cordifolia (willd) is widely known as Amrita or Guduchi in India. It is one of the most important herb used in Ayurveda drug preparations. Acharya Bhavprakash has mentioned the potential action of Guduchi as Rasayana (Rejuvenation), Sangrahi (Astringent), Balya (increases strength), Agnideepana (Rectifies metabolism) and Tridoshashamaka.^[16] It is prescribed in

Fever, Diabetes, Urinary disorders, Dyspepsia, Jaundice, skin diseases, Diarrhoea, Dysentery, Leprosy, Helmenthiasis and Rheumatoid Arthritis.^[17,18]

In Ayurveda, many pharmaceutical procedures are used to modify the natural products to make them more palatable, absorbable and convert them into therapeutically potent drugs these processes are termed as Kalpanas. There are five basic Kalpanas mentioned in Samhitas. Apart from these five Kalpanas, there are many secondary derivatives of the five basic Kalpanas; known as Upakalpana. "Sattva" is an aqueous, extractable, solid substance collected from herbal drugs. Guduchi Sattva is one of the most commonly used aqueous extract in Ayurvedic pharmaceuticals. The starch of Guduchi, known as Guduchi Sattva is more commonly prescribed for various kinds of fevers, hence termed as Indian Quinine. In Unani system of medicine "Sat Giloe" is used in the drug preparations. "Arq Giloe" prepared from fresh guduchi is considered a febrifuge, while "Arq Maul Laham Mako - Kashiwala" is a general tonic.^[19] As per the definition in A.F.I. "Sattva" is an aqueous extractable solid substance collected from herbal plants.^[20] The Guduchi Sattva - was mentioned in "Rasendra Mangalam" for the first time.^[21] Guduchi sattva is described in Yoga Ratnakar, Siddhayoga Sangraha, Rasayoga Sagar, Dravyaguna vigyana and other samhitas.

PROCESS OF COMPOSING GUDUCHI SATTVA

Every text has mentioned different methods of preparation of Guduchi Sattva. In Siddha Yoga sangraha, stem of Guduchi is cut into small pieces and these pieces are pounded. This pounded Guduchi is soaked in water overnight. Next day it is filtered through cloth and it is kept undisturbed for sedimentation. The supernatant liquid is decanted and sediment is carefully collected.^[22]

According to Rasayoga Sagar, Guduchi Kalka is made by trituration and it is soaked in water.^[23] The exact quantity of water is not mentioned.

In Yoga Ratnakara, Guduchi stem is cut into small pieces and triturated in water and then filtered through cloth. The supernatant liquid is decanted and sediment is collected.^[24] There is no exact mention of amount of water and overnight soaking.

THE IMMUNOMODULATORY PROPERTY OF GUDUCHI

The immunomodulatory property of Guduchi is very well studied and documented.^[25,26,27] Active compounds like N-formylannonain, cordifolioside A, 11- hydroxy mustakone, N- methyl-2-pyrrolidone, magnoflorine, syringin, tinocordiside has shown potential immunomodulatory and cytotoxic effects.^[25-27,28] Guduchi Sattva influences the cytokine production, stimulation and activation of immune effector cells and mitogenicity.^[29] Synergistic effects of compounds in the

immunomodulatory activity of Guduchi are documented.^[30]

PROBABLE MODE OF ACTION

For understanding the probable mode of action of Guduchi sattva in Thrombocytopenia induced epistaxis; we must first understand the samprapti (Pathogenesis) of Raktapitta; as this can be studied parallel with ITP. Due to Nidana (causative factors), the pitta dosha gets vitiated, and it in turn vitiates the Rakta Dhatu, as they are closely related to each other. The ushna guna of pitta, liquifies some portion from dhatus like Mamsa, meda etc. This after mixing with Raktadhātu; exponentially increases the volume of Rakta dhatu flowing through vessels; generating immense pressure on their walls. As a result of the increased volume and ushnaguna of vitiated pitta, the walls of vessels get perforated, resulting in oozing of blood. The blood starts oozing from the natural orifices of the body.^[31]

Ayurveda, describes Guduchi as Bitter (Tikta) and Astringent (Kashaya) in taste, Sweet (Madhura) in Vipaka, Tridosahara, Rasayana, Balya, Jvaraghna and Raktashodhaka in action.^[32] Owing to these properties Guduchi propitiates the vitiated pitta and also purifies the deranged Rakta dhatu. This pacifies vitiated pitta and Rakta dhatu restoring normalcy in them.

Guduchi possesses immunomodulatory and cytotoxic effect.^[25-27, 28] The stimulation and activation of immune effector cells and mitogenicity; is the probable mode of action on ITP.

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